

**THE UNITED REPUBLIC OF TANZANIA  
MINISTRY OF EDUCATION AND VOCATIONAL TRAINING  
FORM TWO SECONDARY EDUCATION EXAMINATION, 2013**

0033

**BIOLOGY****Time: 2½ HOURS****INSTRUCTIONS**

1. This paper consists of sections A, B and C.
2. Answer **ALL** questions from sections A and B, and only **ONE** from section C.
3. **ALL** answers must be written in the spaces provided.
4. Write your examination number at the top right corner of every page.
5. **ALL** writing must be in blue or black ink **EXCEPT** diagrams which must be in pencil.
6. Cellphones are not allowed in the examination room.

<b>FOR EXAMINER'S USE ONLY</b>		
<b>QUESTION NUMBER</b>	<b>SCORE</b>	<b>INITIALS OF EXAMINER</b>
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
<b>TOTAL</b>		

This paper consists of 8 printed pages.

**SECTION A (30 MARKS)**

1. Select the correct answer for each of the following items and write its letter in the box provided.

(i) In Biology experiments are used to test:

- A. facts
- B. hypotheses
- C. laws
- D. problems

(ii) The basic importance of all laboratory rules is to:

- A. avoid dirt in the laboratory
- B. prevent students from entering the laboratory
- C. reduce accidents in the laboratory
- D. reduce the use of chemicals in the laboratory

(iii) A victim of electric shock can be saved from danger of death by giving one of the following First Aid:

- A. pouring a lot of water over the victim
- B. pulling the victim away by hands
- C. removing the victim from the current by using a metallic object
- D. turning off the sources of electricity

(iv) Which of the following are communicable diseases?

- A. Cancer, gonorrhea and syphilis
- B. Cholera, gonorrhea and syphilis
- C. Cholera, kwashiorkor and marasmus
- D. Cholera, marasmus and rickets

(v) Which component of the blood is responsible for transporting oxygen?

- A. Albumin
- B. Fibrinogen
- C. Haemoglobin
- D. Thrombocyte

(vi) The whole process of taking in food, digesting it to provide energy for living and material for growth is known as:

- A. catabolism
- B. metabolism
- C. nutrition
- D. respiration

- (vii) The ability of the human body to resist infection by disease-causing micro-organisms is known as:

A. immunity  
B. inoculation  
C. medication  
D. vaccination

☐

- (viii) A group of interdependent organisms living in an environment is called:

A. community  
B. ecology  
C. ecosystem  
D. population

☐

- (ix) Which of the following mammalian blood vessels contains blood full of oxygen at low pressure?

A. Aorta  
B. Pulmonary artery  
C. Pulmonary vein  
D. Vena cava

☐

- (x) A person who takes too much carbohydrates and lipids develops:

A. giantism  
B. kwashiorkor  
C. marasmus  
D. obesity

☐

2. Each of the following statements is either correct or not correct. Write **TRUE** if the statement is correct or **FALSE** if the statement is not correct.

- (i) All bacteria are harmful. \_\_\_\_\_
- (ii) A person with blood group AB has no antigen. \_\_\_\_\_
- (iii) Breathing into a plastic bag stops hiccups. \_\_\_\_\_
- (iv) Lack of roughage in the diet causes constipation. \_\_\_\_\_
- (v) People living with HIV/AIDS should be stigmatized. \_\_\_\_\_
- (vi) Plant cells possess cell membranes. \_\_\_\_\_
- (vii) Phloem tissues are responsible for the transport of water in vascular plants. \_\_\_\_\_
- (viii) The ileum is the first part of the small intestine. \_\_\_\_\_
- (ix) The largest group in the classification system is phylum. \_\_\_\_\_
- (x) Transpiration helps to remove excess water from plants. \_\_\_\_\_

3. Match the item in List A with the correct item in List B by writing its letter below the number of the corresponding item in List A in the table provided.

LIST A	LIST B
(i) A basic structural and functional unit of life	A. Abiotic component
(ii) Accumulates in muscles during vigorous exercise	B. Biotic component
(iii) A part of a cell which controls the life processes	C. Cell
(iv) A part of a cell which gives shape and support to the cell	D. Cell membrane
(v) A product of anaerobic respiration in plants	E. Cell wall
(vi) A result of lack of vitamin D	F. Cytoplasm
(vii) Deficiency of iodine in the body	G. Ecology
(viii) It consists of the environment and all its interacting components	H. Ecosystem
(ix) Soil, rocks, weather and water	I. Ethanol
(x) The living part of an ecosystem	J. Goitre
	K. Lactic acid
	L. Night blindness
	M. Nucleus
	N. Population
	O. Rickets

### ANSWERS

LIST A	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)
LIST B										

### SECTION B (50 MARKS)

4. (a) What is classification?

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- (b) List four advantages of fungi.

(i) \_\_\_\_\_

\_\_\_\_\_

(ii) \_\_\_\_\_

\_\_\_\_\_

(iii) \_\_\_\_\_

\_\_\_\_\_

(iv) \_\_\_\_\_

\_\_\_\_\_

(c) Outline two disadvantages of fungi.

(i) \_\_\_\_\_

(ii) \_\_\_\_\_

5. (a) (i) What do you understand by the term “laboratory”?

(i) Outline four qualities of a good laboratory.

(b) Mention one function of each of the following apparatus:

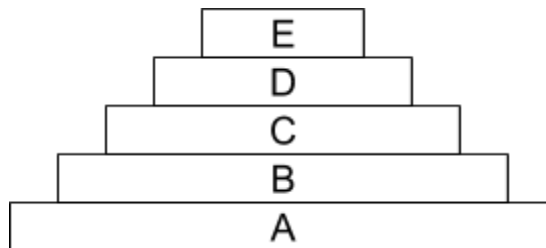
(i) Petri dish \_\_\_\_\_

(ii) Mortar and pestle \_\_\_\_\_

(iii) Hand lens \_\_\_\_\_

(iv) Thermometer \_\_\_\_\_

6. The diagram below represents the different trophic levels in the ecosystem.  
Study it and answer the questions that follow.



(a) Mention a trophic level represented by each letter in the diagram.

A \_\_\_\_\_

B \_\_\_\_\_

C \_\_\_\_\_

D \_\_\_\_\_

E \_\_\_\_\_

(b) Why do the trophic levels form a pyramid shape?

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(c) State the role of the organisms in the trophic level represented by the letter E in the diagram.

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7. (a) Define each of the following terms:

(i) Gaseous exchange

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(ii) Respiration

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(b) Name the respiratory surface for each of the following organisms:

Organism	Respiratory Surface
(i) Insect	
(ii) Mammal	
(iii) Fish	
(iv) Spider	

(c) Give a reason for each of the following characteristics of respiratory surfaces:

(i) Have thin walls

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(ii) Have large surface area

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8. (a) What is meant by the term “agent of disease”?

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(b) Name the agent for each of the following diseases:

Disease	Agent
(i) Common cold	
(ii) Cholera	
(iii) Dysentery	
(iv) Bilharzia	

### SECTION C (20 MARKS)

9. Use the following guidelines to explain how you will teach people in your community about eating a balanced diet:
  - meaning of a balanced diet
  - components of a balanced diet
  - importance of each component
  - deficiency diseases which may result when a person does not eat a balanced diet
  - two factors which contribute to lack of balanced diet among children in Tanzania
10. “KEEP THE ENVIRONMENT CLEAN”. This slogan emphasizes on maintaining the cleanliness of surroundings of the community through proper waste disposal. Write an essay on the above slogan using the following guidelines:
  - meaning of waste
  - meaning of waste disposal
  - types of wastes
  - proper ways of disposing of waste
  - effects of poor waste disposal

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